UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P. D. Rey. 1450

P O Box 1450 Alexandria, Virgima 22313-1450 www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

22850 7590 10/08/2009

10/08/2009

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA. VA 22314 EXAMINER KACKAR, RAM N

ART UNIT PAPER NUMBER

1792 DATE MAILED: 10/08/2009

APPLICATION NO. FILING DATE FIRST NAMED INVENTOR ATTORNEY DOCKET NO. CONFIRMATION NO.

10/561,017 12/16/2005 Junichi Arami 283278US26PCT 5969

TITLE OF INVENTION: HEAT TREATMENT APPARATUS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	01/08/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FIEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450

or Fax (571)-273-2885

INSTRUCTIONS: This appropriate. All further condicated unless corrected maintenance fee notification	form should be used for correspondence including d below or directed oth ions.	or tran	smitting the ISSU Patent, advance of in Block 1, by (a					nould be completed where correspondence address as trate "FEE ADDRESS" for
CURRENT CORRESPONDE	NCE ADDRESS (Note: Use Bl	ock I for	any change of address)	F	ote: A certificate of ee(s) Transmittal. Th spers. Each addition tye its own certificat	mailings of mailin	ig can only be used fo ficate cannot be used f r, such as an assignme ulling or transmission.	r domestic mailings of the or any other accompanying nt or formal drawing, must
20000	REET		MAIER & NI	EUSTADT L.L.	Ce	rtificat	e of Mailing or Trans	mission g deposited with the United tt class mail in an envelope above, or being facsimile ate indicated below.
								(Depositor's name)
				L				(Signature)
				L				(Date)
APPLICATION NO.	FILING DATE	FIRST NAMED INVE		FIRST NAMED INVENT	R ATTORNEY DOCKET NO.		ORNEY DOCKET NO.	CONFIRMATION NO.
10/561,017	12/16/2005			Junichi Arami		2	183278US26PCT	5969
TITLE OF INVENTION:	HEAT TREATMENT.	APPAI	RATUS					
APPLN. TYPE	SMALL ENTITY	IS	SUE FEE DUE	PUBLICATION FEE DU	E PREV. PAID ISSU	E FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO		\$1510	\$300	\$0		\$1810	01/08/2010
EXAMI	NER		ART UNIT	CLASS-SUBCLASS	7			
KACKAR,	RAM N		I792	II8-725000	_			
"Fee Address" indic PTO/SB/47; Rev 03-02 Number is required. 3. ASSIGNEE NAME AN	ondence address (or Cha /122) attached. cation (or "Fee Address' 2 or more recent) attach ND RESIDENCE DATA sess an assignce is identi in 37 CFR 3.11. Comp	nge of "Indicated, Use	Correspondence ation form of a Customer E PRINTED ON		to 3 registered pate stively, igle firm (having as r agent) and the nan itorneys or agents. If the printed. type) patent. If an assign assignment.	a memines of u	ber a 2pto me is 3dentified below, the dentified below, the dentified below below the dentified below below below the dentified below by the delicity below be	ocument has been filed for
Please check the appropria	ate assignee category or	catego	ries (will not be pr	inted on the patent):	☐ Individual ☐ C	'orporat	tion or other private gro	oup entity Government
Advance Order - #	o small entity discount p		ed)	 Payment of Fee(s): (P A check is enclosed Payment by credit The Director is here overpayment, to De 	L ard. Form PTO-203	8 is att	ached. required fee(s), any de	
	SMALL ENTITY statu	ıs. See	37 CFR 1.27.	b. Applicant is no I	onger claiming SMA	LLEN	TITY status. Sec 37 Cl	R 1.27(g)(2).
NOTE: The Issue Fee and interest as shown by the re	Publication Fee (if requeeords of the United Sta	uired) v tes Pat	will not be accepted ent and Trademark	I from anyone other that Office.	n the applicant; a reg	istered	attorney or agent; or th	e assignee or other party in
Authorized Signature _					Date			
Typed or printed name				Registration No.				
This collection of informa an application. Confidenti submitting the completed this form and/or suggestic Box 1450, Alexandria, Vi Alexandria, Virginia 2231	tion is required by 37 C iality is governed by 35 application form to the ons for reducing this bur rginia 22313-1450. DC 3-1450.	FR 1.3 U.S.C. USPT rden, sl D NOT	11. The informatic 122 and 37 CFR O. Time will vary nould be sent to th SEND FEES OR	on is required to obtain on 1.14. This collection is depending upon the in the Chief Information Off COMPLETED FORMS	r retain a benefit by estimated to take 12 lividual case. Any c icer, U.S. Patent and TO THIS ADDRES	the pub minute ommen Trader S. SEN	olic which is to file (and is to complete, including its on the amount of tir mark Office, U.S. Dep ID TO: Commissioner	by the USPTO to process) g gathering, preparing, and me you require to complete artment of Commerce, P.O. for Patents, P.O. Box 1450,

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS

P O Box 1450 Alexandra, Virgima 22313-1450 www.uspto.gov

DATE MAILED: 10/08/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/561,017	12/16/2005	Junichi Arami	283278US26PCT	5969	
22850 7590 10/08/2009			EXAMINER		
OBLON, SPIVA	K, MCCLELLAND	KACKAR, RAM N			
1940 DUKE STRE		ART UNIT	PAPER NUMBER		
ALEXANDRIA, V	'A 22314	1792			

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Application No. Applicant(s) 10/561.017 ARAMI, JUNICHI Interview Summary Examiner Art Unit Ram N. Kackar 1792 All participants (applicant, applicant's representative, PTO personnel): (1) Ram N. Kackar. (3) (2) Ron Rudder. (4)____. Date of Interview: 24 September 2009. Type: a) ☐ Telephonic b) ☐ Video Conference c) Personal (copy given to: 1) applicant 2) applicant's representative Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No. If Yes, brief description: ____ Claim(s) discussed: 4 and 6. Identification of prior art discussed: ves. Agreement with respect to the claims f) was reached. g) was not reached. h) N/A. Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments; Applicant agreed for the amendment to distinguish over prior art. (A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.) THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any factor-bace, video conference, or telephone interview with regard to an application must be made of record in the application where or not an apprenent with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135, (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged only promise, stipulation, or understanding in relation to with there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant of the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal Interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate. the Form should be mailed ormountly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the interview Summay Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

- A complete and proper recordation of the substance of any interview should include at least the following applicable items:
- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the
- Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
 - (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the applicant may desire to emphasize and fully
 - describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

	Application No.	Applicant(s)		
	10/561.017	ARAMI, JUNICHI		
Notice of Allowability	Examiner	Art Unit		
	Ram N. Kackar	1792		
- The MAILING DATE of this communication ap All claims being allowable, PROSECUTION ON THE MERITS is herewith (or previously mailed), a Notice of Allowance (PTOL-81 NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATE of the Office or upon petition by the applicant. See 37 CFR 1.3	S (OR REMAINS) CLOSED in 5) or other appropriate common RIGHTS. This application is a 13 and MPEP 1308.	n this application. If not include unication will be mailed in due	ded e course. THIS	
 This communication is responsive to <u>RCE dated 8/31/20</u> 	<u>09</u> .			
2. The allowed claim(s) is/are <u>4-8,15,17,18 and 23-26</u> .				
3. ☑ Acknowledgment is made of a claim for foreign priority a) ☑ All b) ☐ some* c) ☐ None of the: 1. ☑ Certified copies of the priority documents ha 2. ☐ Certified copies of the priority documents ha 3. ☐ Copies of the certified copies of the priority of International Bureau (PCT Rule 17.2(a)). * Certified copies not received: ☐ ☐. Applicant has THREE MONTHS FROM THE *MAILING DATA roted below. Failure to timely comply will result in ABANDON THIS THREE-MONTH PERIOD IS NOT EXTENDABLE. 4. ☐ A SUBSTITUTE OATH OR DECLARATION must be sub INFORMAL PATENT APPLICATION (PTO-152) which girls in Corrected blow. Substitute (PTO-152) which girls in Corrected DRAWINGS (as "replacement sheets") m (a) ☐ including changes required by the Notice of Draftspe	ve been received. ve been received in Applicatio focuments have been receive To fithis communication to file MENT of this application. writted. Note the attached EX- tives reason(s) why the oath of ust be submitted.	on No d in this national stage applied a reply complying with the reasonable at the reasonable and the reasonable at the reasonab	equirements	
D hereto or 2) to Paper No.Mail Date D including changes required by the attached Examine Paper No.Mail Date Identifying Indicia such as the application number (see 37 CFR each sheet. Replacement sheet(s) should be labeled as such in the page of the pag	t 1.84(c)) should be written on t	he drawings in the front (not th	ne back) of	
6. ☐ DEPOSIT OF and/or INFORMATION about the department attached Examiner's comment regarding REQUIREMEN	posit of BIOLOGICAL MAT	ERIAL must be submitted.	Note the	
Attachment(s) 1. Notice of References Cited (PTO-892) 2. Notice of Draftperson's Patent Drawing Review (PTO-948) 3. Information Disclosure Statements (PTO/SB/08), Paper No /Mail Date 9/9/2009 4. Examiner's Comment Regarding Requirement for Deposit of Biological Material	6. Interview S Paper No. 7. Examiner's	formal Patent Application ummary (PTO-413), Mail Date <u>9/24/2009</u> . Amendment/Comment Statement of Reasons for Al	lowance	

Application/Control Number: 10/561,017 Page 2

Art Unit: 1792

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

 A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/31/2009 has been entered and further amended as below.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Claims 4 and 6 are further amended as below:

Claim 4 is amended as below:

A mounting table for holding a target object, comprising:

a heating unit including a reflector plate made of an opaque quartz, and a quartz tube welded to a surface of the reflector plate, and

a mounting table cover member <u>having an open cylindrical shape with a closed upper</u> surface and a peripheral sidewall, and installed to cover the reflector plate with said peripheral Application/Control Number: 10/561,017

Art Unit: 1792

sidewall extending along an outermost surface of the reflector plate to a position at a base of the reflector plate, [[a]] the target object being mounted thereon,

wherein the mounting table cover member is made of a light absorbing material, and a carbon wire which generates heat when a current is applied thereto is disposed between the reflector plate and the mounting table cover member,

wherein the mounting table cover member has a circular lid shape and an inner surface of a sidewall of the mounting table cover member has a diameter greater than a diameter of the reflector plate so that the inner surface of the sidewall of the mounting table cover member is in contact with a side surface of the reflector plate to be circumscribed thereto, and

wherein a positioning projection having a ring-shape and made of a same material as that of the reflector plate is provided in an upper direction at a peripheral region of the reflector plate to form a component of the outermost surface of the reflector plate and positions the mounting table cover member which is inserted by the positioning projection, the positioning projection contacting with the mounting table cover member.

Claim 6 is amended as below:

A heat treatment apparatus for treating a target object, comprising:

a mounting table including a heating unit having a reflector plate made of an opaque quartz, and a quartz tube welded to a surface of the reflector plate; a mounting table cover member having an open cylindrical shape with a closed upper surface and a peripheral sidewall, and installed to cover the reflector plate with said peripheral sidewall extending along an outermost surface of the reflector plate to a position at a base at a base of the reflector plate, [[a]]

Application/Control Number: 10/561,017 Page 4

Art Unit: 1792

the target object being mounted thereon, wherein the mounting table cover member is made of a light absorbing material, and a carbon wire which generates heat when a current is applied thereto is disposed between the reflector plate and the mounting table cover member;

a processing chamber accommodating therein the mounting table; a gas supply unit for supplying a gas in the processing chamber; and a vacuum pumping system for evacuating the processing chamber,

wherein the mounting table cover member has a circular lid shape and an inner surface of a sidewall of the mounting table cover member has a diameter greater than a diameter of the reflector plate so that the inner surface of the sidewall of the mounting table cover member is in contact with a side surface of the reflector plate to be circumscribed thereto, and

wherein a positioning projection having a ring-shape and made of a same material as that of the reflector plate is provided in an upper direction at a peripheral region of the reflector plate to form a component of the outermost surface of the reflector plate and positions the mounting table cover member which is inserted by the positioning projection, the positioning projection contacting with the mounting table cover member.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Ron Rudder on 9/24/2009.

3. Claims 4-8, 15, 17-18 and 23-26 are allowed.

Art Unit: 1792

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ram N Kackar/ Primary Examiner, Art Unit 1792